DHS Science and Technology Directorate

ChemTag: Personal Chemical Warning Device

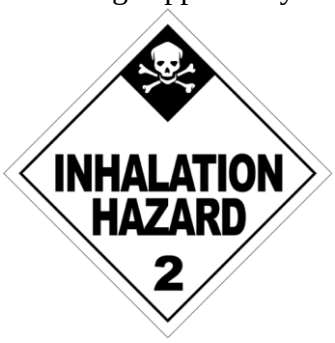
HSARPA'S RESPONSE

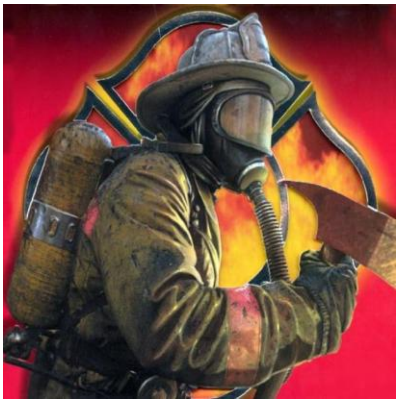
In 2010, more than 25 firefighters lost their lives as a result of toxic chemical exposure. More than 25,000 additional responders were seriously injured, requiring medical attention and rehabilitation. Firefighters and EMS personnel regularly encounter chemical threats when responding to everyday incidents. Sometimes the threats are obvious, due to the nature of the response location, as in commercial or industrial fires. Other times, toxic chemicals are dispersed as materials burn or as chemical containers are breached without warning, and numerous encounters can occur during clean up operations or simple service calls. Regardless of the situation, advanced information regarding the presence of toxic chemicals for our nation's first responders can save lives.

Today personal single and multi-gas detectors exist to alert first responders of dangerous levels of toxic chemicals. These devices are certified, reliable and accepted for many applications. However they are quite expensive and cumbersome to deploy, making it difficult to cover many response scenarios.

HSARPA'S RESPONSE

With guidance from the First Responder Working Group, HSARPA has initiated the ChemTag program to provide First Responders with a personal chemical warning device. The devices will be ruggized to operate in the harsh environments our Nation's front line experience on a daily basis without hindering the life-saving support they provide. ChemTags will be low-cost, user-friendly devices that will notify the First Responder of a dangerous chemical environment with BETA level prototypes reading Permissible Exposure Limits (PEL) for Carbon Monoxide, Oxygen, Hydrogen Cyanide and Methane.





PERFORMERS

Synkera Technologies, Inc. will utilize DHS S&T SBIR technology in conjunction with their commercial partner, RAE Systems to develop a low-cost device that First Responders can trust. Synkera's MikroKera™ Ultra sensors (developed with SBIR funding) will be re-packaged into a smaller form that leads to a new low cost commercial device that will enhance responder situational awareness and notify them of a potentially dangerous chemical situation, saving their lives and preventing injuries.

PROJECT TEAM

DHS HSARPA, Synkera Technologies Inc, RAE Systems, Los Angeles Fire Department, Los Angeles Police Department, and Chicago Fire Department.

Homeland Security
Science and Technology

To learn more about ChemTag, please email SandTFRG@dhs.gov.

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